



Geotechnical Section

Field Investigation Unit

Geotechnical Engineering Unit

Ch-002 20.0kV 13.4mm x400 SE(M)

100um

**“Never Design Something on Paper
You Have to Wish Into the Ground.”**

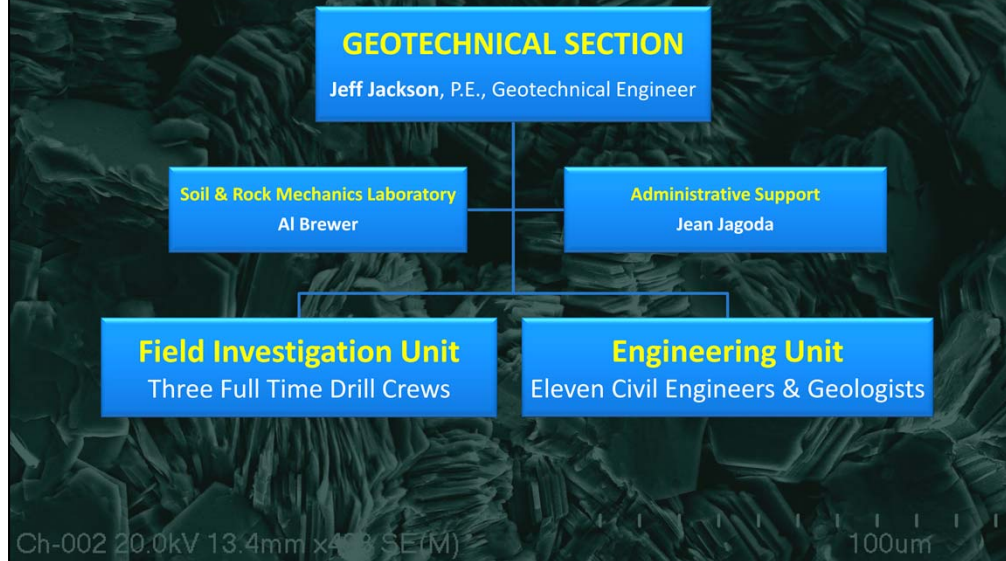
Karl Terzaghi, the Father of Soil Mechanics



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Geotechnical Section Organization



Field Investigation Unit

Field Investigation Unit

Mike Lloyd, Supervisor

Crew 3

Ivyl Boyd, Crew Chief

Crew 4

John Winfield, Crew Chief

Crew 6

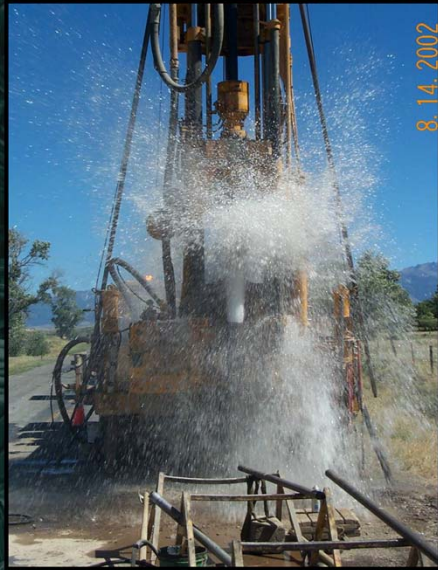
Ben Frederick, Crew Chief

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DRILLING CAPABILITY

- 3 Crews
- CPT on F-550 Truck
- CME 850 - Tracked
- CME 1050 - ATV
- CME 55 - Truck Mounted
- CME 45 "Skid" Rig
- Barge (Mounts CME 45 Drill)



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Bridge Foundation Investigations



Whether for pile, spread footing, or drilled shaft foundations.

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Roadway Alignment Investigations

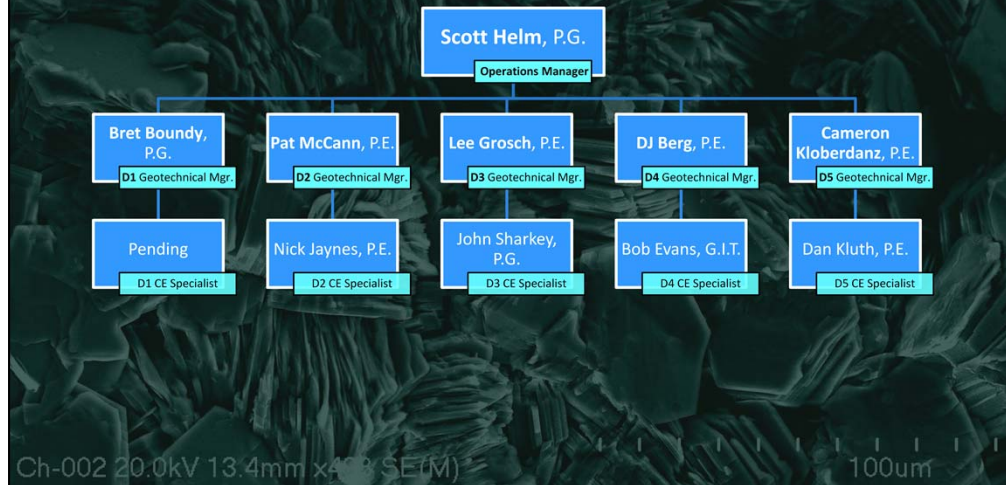


For subgrade, embankment, cut, fill, and culvert locations.

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Geotechnical Engineering Unit



The Geotechnical Engineering Unit is responsible for-

- **PROJECT DESIGN**

- Conduct geotechnical investigations, analyses, and design producing engineering reports, design memos and detailed drawings, and contract documents such as special provisions.

- **CONSTRUCTION SUPPORT**

- Guidance for building geotechnical features and inspection support, geotechnical monitoring during construction, and evaluation of unexpected site conditions.

- **MAINTENANCE SUPPORT & EMERGENCY RESPONSE**

- Assisting with emergencies arising from rockfall incidents, failure of slopes or pavement, stream/river bank instability, foundation and retaining wall issues, meteor impacts, zombie invasions, etc.

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The Engineering Unit also-

- Has its own accredited laboratory for testing of soil and rock samples.
- Conducts and maintains long term, statewide, monitoring programs.
- Maintains the MDT *Rock Slope Asset Management Program* (RAMP, formerly known as the Rockfall Hazard Rating System.)
- Involved in numerous multidiscipline MDT research projects.



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PROJECT DESIGN

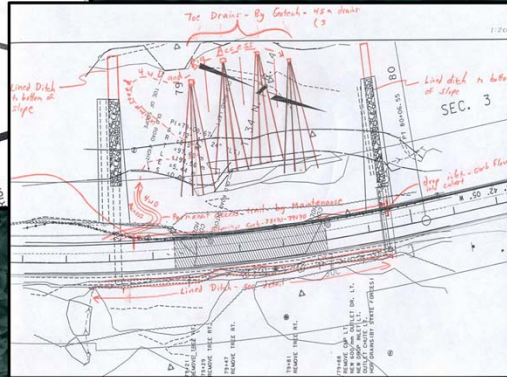
Areas of Responsibility

- Pile Foundations
- Spread Footing Foundations
- Drilled Shaft Foundations
- Soil Slope Design
- Rock Slope Design
- Rockfall Mitigation
- Embankment Foundations
- Culvert Foundations
- Landslide Mitigation
- Earthwork Shrink/Swell
- Subsurface Drainage
- Geotextile Applications
- Erosion Mitigation
- Wetland Hydraulics
- Groundwater Issues
- Construction Dewatering
- Forensic Evaluations
- Stream Scour Mitigation
- Reinforced Soil Slopes
- Retaining Walls
- MSE Walls
- Soil Nail Walls
- Construction Blasting
- Demolition Blasting

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PROJECT DESIGN



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Construction Monitoring and Support



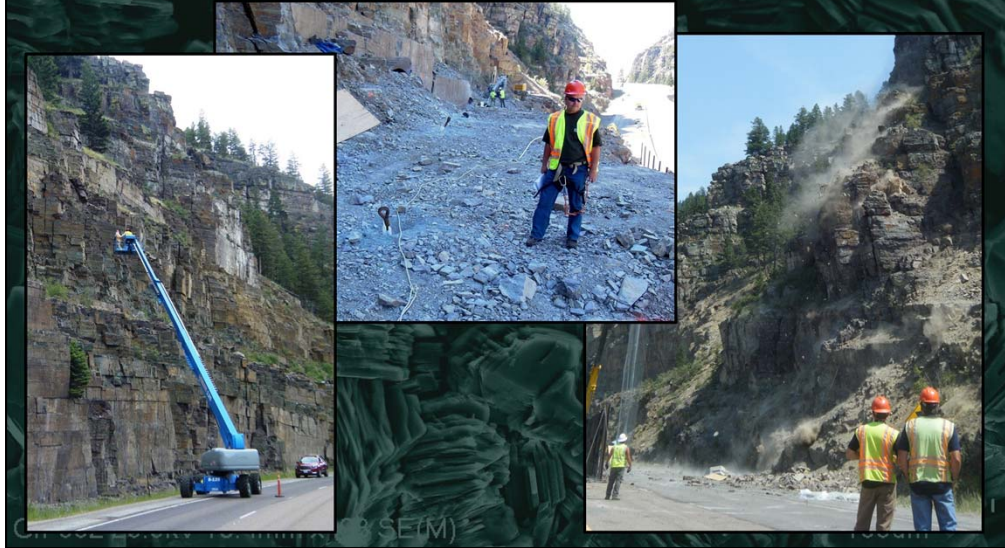
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Construction Monitoring and Support



Construction Monitoring and Support



And Occasionally
Destruction Monitoring and
Support



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Maintenance Support & Emergency Response

Slope Failures



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Maintenance Support & Emergency Response

Slope Failures



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Maintenance Support & Emergency Response

Repairs



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Maintenance Support & Emergency Response

Repairs



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Maintenance Support & Emergency Response

Repairs



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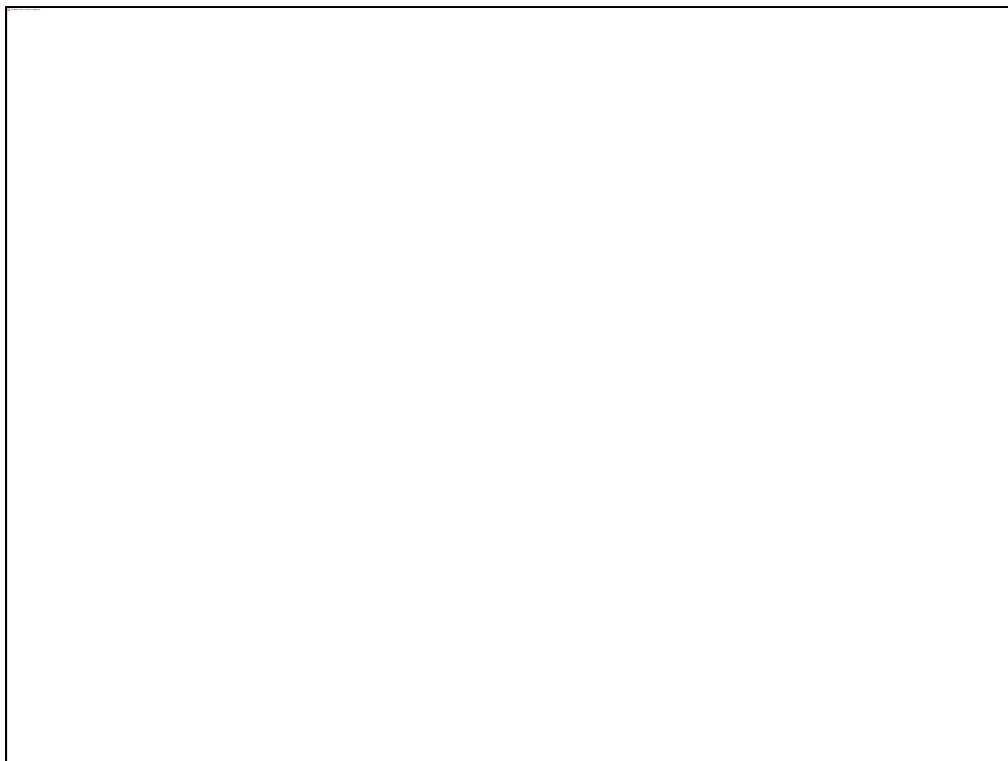
Maintenance Support & Emergency Response

Repairs

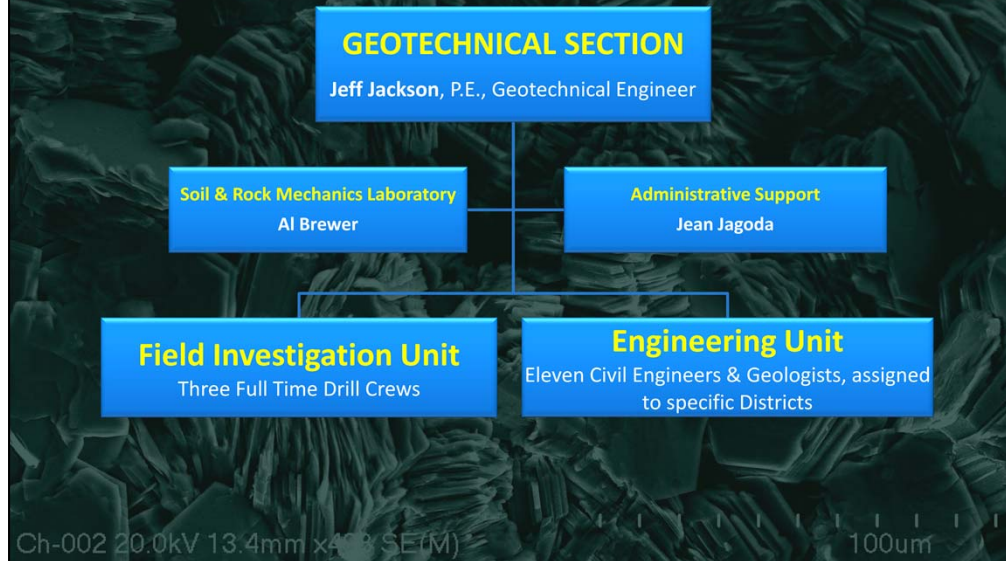


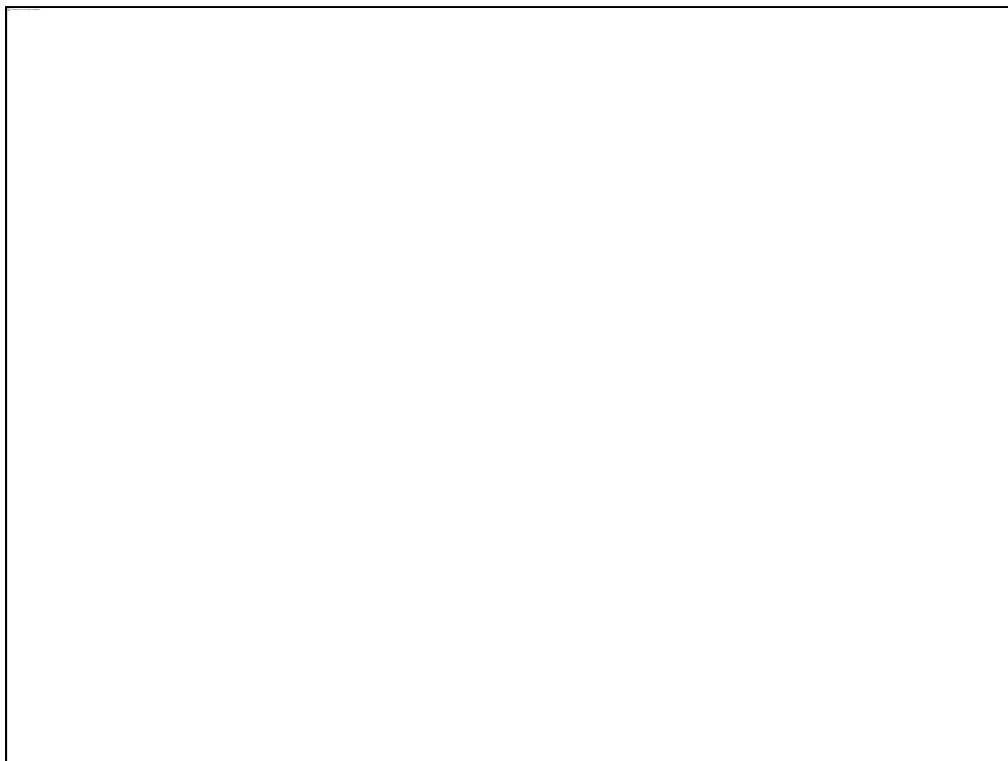
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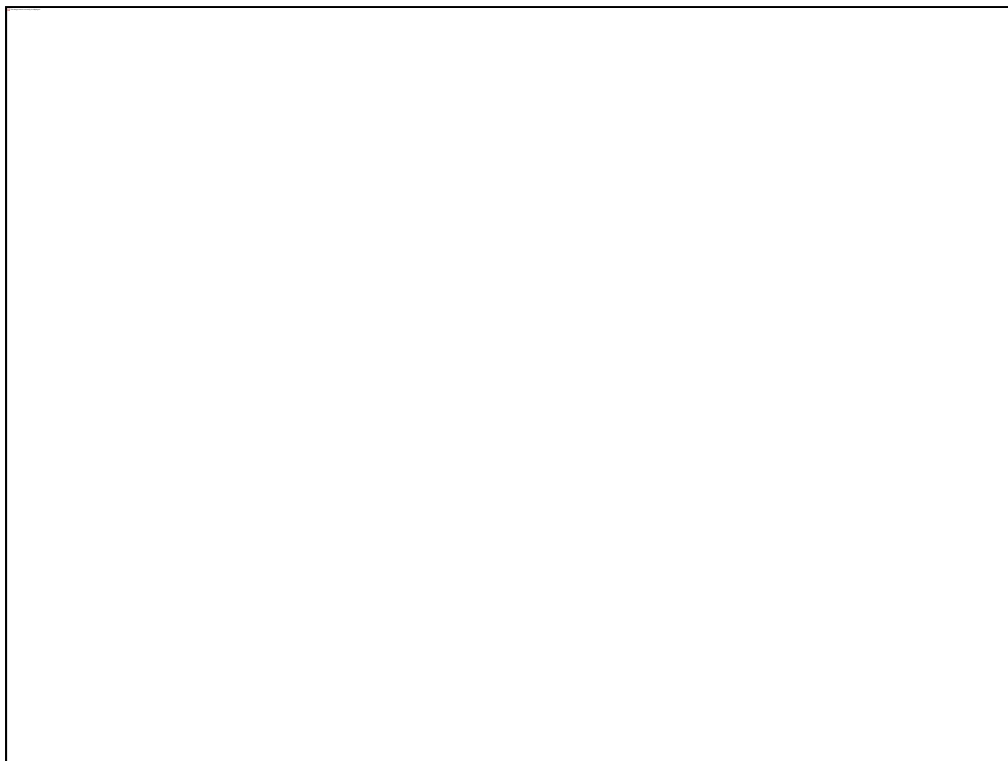
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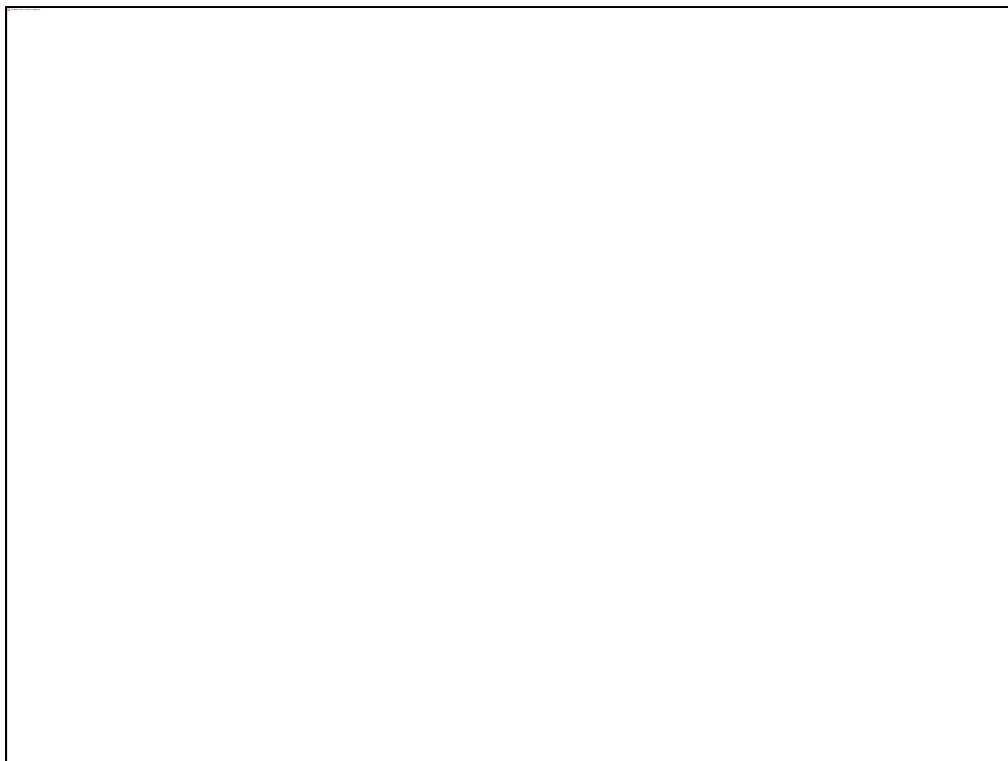


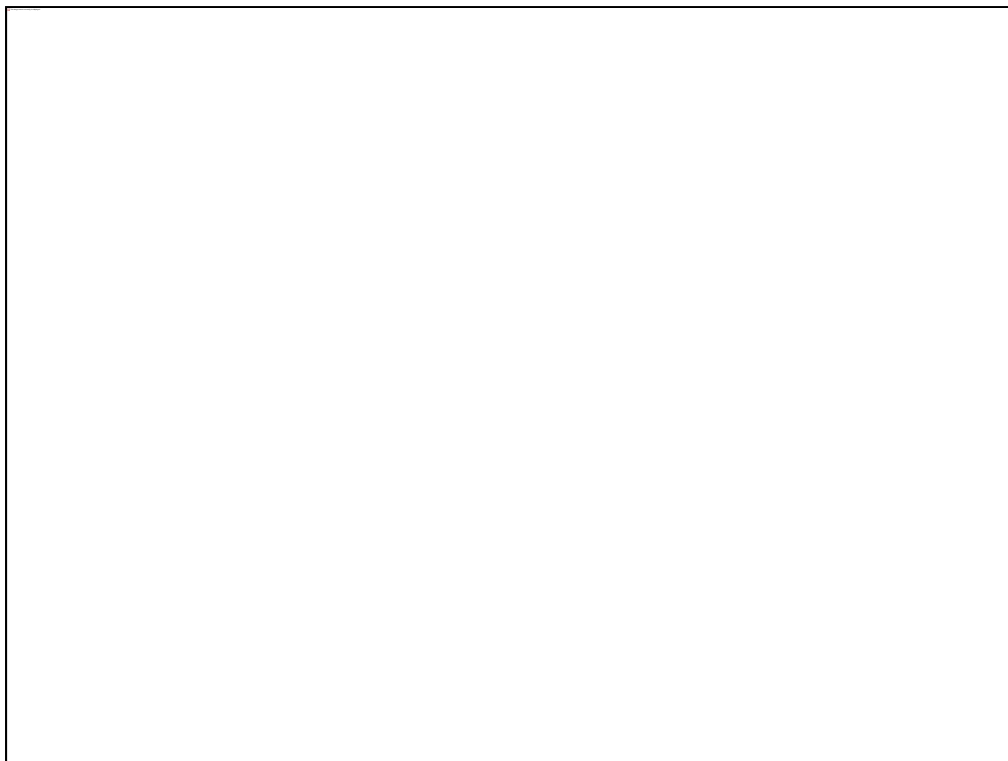
Geotechnical Section Organization











QUESTIONS?



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